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ART. XVII.—*On the Cotton Trade of India.* By J. A.  
MANN, Esq., F.S.S.

[Read 21st January, 1860.]

THE great and increasing importance attaching to the question of Cotton supply renders any remarks which may throw light on the subject, of peculiar interest; the fact that the value of our cotton manufacture now exceeds sixty million pounds sterling annually—consuming therein upwards of four hundred thousand tons of the simple fibre—employing nearly one hundred million pounds sterling of capital—and giving employment directly and indirectly to about four millions of our countrymen, is alone so startling and withal so colossal as almost to defy comprehension. That a fibre so simple, and with us but a century since so little known and appreciated, should now give rise to such wealth and comfort, almost partakes of fiction; and one knows not how sufficiently to praise the ingenuity of Wyatt, Kay, Hargreaves, Arkwright, and Crompton, who led the way to raise the manufacture in little more than a century to its present prodigious proportions. But the extension, not to say the sustenance, of this trade, is primarily dependent upon the supply of the raw material: upon this, the one hundred millions of our capital, and the livelihood of near four millions of our countrymen is dependent, a matter so serious and of such magnitude, as to make the question one of the State; the appalling result only contemplated of one year's stoppage of the supply, is sufficient to force a dread of the slender basis upon which the magnificent fabric depends. Our legislators are however now fully alive to its importance, and it is pleasing to mark the attention the matter receives amid the turmoil of our immense governmental affairs.

The race for supremacy in trade is now so energetically joined in by many of our Continental neighbours, and our Atlantic cousins, that it is more particularly desirable our supply should be capable of equal progression; any tendency to a deficiency must so check the trade as inevitably to involve a very wide-spread loss, and the only manner in which the certainty can be assured, is in the liberal encouragement of the cultivation in our colonies, and in brief to have as many sources of

supply, to guard against the risk of a local failure. A glance at the statistics on the subject will be sufficient to indicate its possibility—if we observe the falling off in supply in the years 1836 and 1837, caused by the failure of the crops in the United States, and remark the comparatively large stock held at that period, which meliorated its effects; we will discover the same warning indications in the preponderance of demand over supply in the years 1854, 1855, and 1856; and though our hopes seem now well grounded of a more regular and certain supply, we must not forget that the effects of any revulsion which may possibly arise, will be the more severe, from the increased interest at stake: and that the present condition of our stocks is such as not to warrant on our part any prodigality.

It is not, however, the question of demand with which we have to deal, but with that of *supply*. Attention has lately been directed to many sources, each enjoying peculiar claims to attention, but it is generally acknowledged that our more immediate wants must be supplied from our Indian possessions, though I am glad to be able to state that Africa is now making rapid progress to become a source of extensive supplies, and time must decide their relative abilities and merits; the general impression appears to be that when the resources of India, as those of Africa, come to be developed, they will be able successfully to compete with the United States of America in our markets, and furnish us with such quantities of the article as will meet not only our immediate requirements, but any prospective increase for a long period to come.

India is, according to our knowledge, the accredited birth-place of the cotton manufacture. In one of the hymns of the Rigveda, said to have been written fifteen centuries before our era, reference is made to *cotton in the loom* there, at which early date therefore it must have acquired some considerable footing; and it seems probable that the process of spinning and weaving was carried on at the earliest date of which we have any record, in much the same manner as it is there in the present day; the strictly conservative character of the Asiatic—the profusion of labour in the present mode of manufacture—the primitive form of implements—and the carelessness of the cultivation, all tend to this view; whether the quality of the native cotton has improved or deteriorated is a matter of doubt, but this is certain, in former times large irrigation works existed there, and equally so that the poorer cultivator is by a combination of circumstances in the present day considerably imposed upon by his superiors either in power or pecuniary advantage.

Considering the disadvantages of their primitive mode of manufacture, it is somewhat a matter of admiration that the natives of

India should have arrived at such exceeding proficiency in the delicacy of the fabrics manufactured by them. Muslins (so called from Mosul, in Mesopotamia,) were among the earliest articles of foreign trade in the East; those manufactured by the natives, particularly at Dacca, where the trade reached great excellence, are still unsurpassed in fineness by either our hand or machine-wove fabrics. Taverner said "they are so fine that you can scarcely feel them in your hand," and that they were wove from thread of such extraordinary delicacy, that a single pound of cotton was spun for it into a length of 250 miles.<sup>1</sup> Though the manner in which this wonderful delicacy of texture was wrought is very surprising, it is not astonishing that the natives of India should have excelled in the manufacture. In such a climate the delicacy and fineness of the garment must necessarily have been of first consideration, and when we regard how greedily fabrics eminently combining these qualities must have been sought after by the wealthy and licentious nobles of India, not fallen India of modern times, but the India of poetry and romance, of splendour and glory! every stimulus to excellence in this direction must have been afforded by their luxurious mode of living, and their vanity. Utility and economy were to be the characteristics of the energetic and thrifty European, but to the Asiatic no expenditure of labour or material was too great that could add in the slightest to his wishes in this respect.

The earlier condition of India and its cotton manufacture are fields for speculation; to attempt any conclusive argument on the subject would be mere empiricism, but the opinion may be ventured, that at the climax of the former greatness of India, the population would not have been less than that of the present day, or indeed it may for some period past have even diminished, and our knowledge of their social, moral, and religious institutions support me in this—during the period in which those circumstances existed which wrought its downfall, the people of India as a whole must undoubtedly have been considerably impoverished, and this would not only tend to check an increase of population, but also to diminish the demand for cotton manufactures; the long period for which the manufacture has existed there to our knowledge, should, under a prosperous condition of the people, have given rise to a greater consumption, and if any testimony were required of the antiquity of the trade and of its proportions, perhaps the fact that the plant is now found throughout all India, is as conclusive as any. In these surmises is not, of course, embraced the period in which India

<sup>1</sup> To prevent misconception, it may be remarked here, that Messrs. Houldsworth's of Manchester, have *spun* yarn nearly equal to 400 miles to the pound.

has been under the civilizing auspices of the British government—the progress which civilization has made in that period has doubtless raised the energies of the people, and caused an increase in the consumption of cotton goods.

Of the origin or extent of the earlier export trade of India, and afterwards of China, little more is known. We have reason to believe that five centuries before our era, cotton was exported from India; for in the reign of Amasis 569–525 years B.C., cotton was known in Egypt, where, it is not probable, any then was grown. Herodotus, writing 445 B.C., speaking of the usages of the Indi, says, (lib. iii, cap. 106), “the wild trees bear fleeces for their fruits surpassing those of the sheep in beauty and excellence, and the natives clothe themselves in cloths made therefrom,” and (lib. iii, cap. 47) calls it *tree-wool* (εἶριον ἀπὸ ξύλου). From India the manufacture seems to have reached Persia, where, according to Strabo, (lib. xv,) who died A.D. 25, in Susiana, a province of Persia, at the head of the Persian Gulf, it grew and was manufactured into cloth. At the Christian era the growth and manufacture were carried on in Egypt, and Pliny (Hist. Nat. lib. xix, c. 1), mentions, A.D. 70, that the cotton plant was grown in Upper Egypt towards Arabia. Arrian, who wrote in the second century, (Arrian Indi, c. 16, p. 582), stated that cotton cloths were among the articles received from India by the Romans of his time, though at this date the importation must have been of a desultory character, as no mention is made of the different kinds, by any writers of the period, or in the Roman law *de Publicanis et vectigalibus*, which detailed all the different kinds of merchandize then imported; indeed, until *Justinian's Digest of the Laws*, in which, in a list of goods imported, is enumerated (A.D. 529) Indian cotton goods, we do not find notice taken of them by any writer, though other goods are repeatedly mentioned. In the *Circumnavigation of the Erythraean Sea* by Arrian, written in the second century, cotton goods are first distinctly mentioned as an article of trade, and particular mention is made of the import and export of several Indian towns, in their trade with the Arab Greeks. The Arab traders brought Indian cottons to Aduli, a port on the Red Sea—the ports beyond the Red Sea had an established trade with Patali (on the Indus), Ariakà, and Barygaza (the modern Baroch on the Nerbudda), and received from them, among other things, cotton goods. Baroch is said to have exported largely, the calicoes, muslins, and other goods both plain and figured with flowers, made in the provinces of which it was the port, and in the interior of the more remote provinces of India. Masalia, (the modern Masulipatam), was then, as it has ever been since, famous for

the manufacture of cotton piece goods. The muslins of Bengal were then, as in the present day, superior to all others, and received from the Greeks the name of *Gangitiki*, from being made on the borders of the Ganges. Surat was famous for its coloured chintzes and piece-goods, but the Baroche muslins were inferior to those of Bengal and Madras, as were the printed chintzes of Guzerat to those of the Coromandel Coast.

Thus, while we were in primeval darkness, India was in comparative light—while our ancestors in this northern clime were in a state of wild and undisguised nudity, the Indian had for thousands of years clad himself in the exquisite cotton manufactures, and not content with this, supplied the great European nations of the time, with his surplus productions. But how much has England now revolutionized the manufacturing world—the tide has now turned upon the Oriental. In the year 1815, for the first time, after the opening of the country to private trade, a few pounds of our British manufactured cotton yarn defiled the Eastern natives' skin, and since then such has been the force of circumstances, that their exports of cotton goods hence have dwindled away until they are now almost annihilated, while we are year by year supplying them with largely increasing quantities of both yarns and goods manufactured from the raw material they themselves produce: nevertheless a considerable export still takes place of Indian cotton piece-goods to the ports of the Red Sea, China, and the Eastern Archipelago. But the question now arises, will India become strictly a producing country, exporting all her produce to Great Britain to be manufactured, receiving in return cheaper and more serviceable manufactures, or will India be able to adopt the means by which we have so turned the tide, and in her turn manufacture for herself the immense quantity of cotton manufactures consumed by the native population? We may have occasion to show that the *latter must* ultimately be the case; but for the present we will look upon India as a source whence our demands for the raw material may be supplied.

Apart from the reasons which point to the inadequacy of the rate of production in America to meet the growing demand, there are also numerous others which render it of the utmost importance that the supply of cotton from India should be encouraged to the largest possible extent. Though we shall confine ourselves as far as practicable to the statistics elucidating the past and present export trade, the causes which have prevented its more rapid development become an important part of our subject. As a colony in which we have a deep interest, enjoying an abundance of labour, with almost every

diversity of soil and climate, and adapted to cotton cultivation, as is unmistakably proved in its present extent and antiquity, there is every incentive to probe the reason, and endeavour to point out the means by which so desirable an end may be attained.

The proportion which the quantity of East India cotton bears to the total imported into this country from all other sources, may be conveniently illustrated in annual averages of quinquennial periods, thus:—

	East India.		All other kinds.	
	lbs.		lbs.	
1800—4 ..	3,551,375 ..	or 6 per cent.	54,068,675 ..	or 94 per cent.
1805—9 ..	4,931,850 ..	or 7 ..	60,908,602 ..	or 93 ..
1810—4 ..	9,637,687 ..	or 11 ..	77,150,224 ..	or 89 ..
1815—9 ..	34,293,655 ..	or 26 ..	96,144,852 ..	or 74 ..
1820—4 ..	13,553,256 ..	or 9 ..	140,012,650 ..	or 91 ..
1825—9 ..	23,793,450 ..	or 10 ..	201,924,481 ..	or 90 ..
1830—4 ..	27,828,314 ..	or 9 ..	266,171,904 ..	or 91 ..
1835—9 ..	51,269,320 ..	or 12 ..	363,778,868 ..	or 88 ..
1840—4 ..	84,344,421 ..	or 14 ..	501,962,553 ..	or 86 ..
1845—9 ..	66,370,532 ..	or 11 ..	560,236,071 ..	or 89 ..
1850—4 ..	125,621,264 ..	or 16 ..	701,048,927 ..	or 84 ..
1855—8 ..	177,184,140 ..	or 18 ..	802,640,692 ..	or 82 ..
(4 years)				

clearly shewing the comparatively small supply of East India, as compared with the other kinds imported, of which the United States forms by far the larger part.

The first recorded import of East India cotton took place in 1783, and though there is an evident and considerable rate of increase up to the present time, it is still very unsatisfactory when compared with the increase shown in that from the United States. Up to the beginning of the present century, it was so fluctuating as to render it almost impossible to ascribe to it any general or rather specific ratio of increase; by taking for our basis however, the annual averages of decennial periods, we shall be able to arrive at a rate of progression and account intelligibly for the variations which are so frequent and apparently uncertain. Thus the quantities imported have been:—

	lbs.		lbs.
1780 to 1798 ..	487,230	1829 to 1838 ..	38,025,505
1799 .. 1808 ..	3,661,134	1839 .. 1848 ..	72,990,639
1809 .. 1818 ..	19,776,975	1849 .. 1858 ..	140,768,139
1819 .. 1828 ..	23,058,315		

And much as we may deplore the great discrepancy in the rate of

progress as compared with that in the case of the American cotton, it is pleasing to mark the steady increase in the supply, despite all obstacles; the most novel and important feature however presented is the sudden check which arrested the onward progress in the period 1819 to 1828, the consequence of the immense reduction in price established in the interval; and we cannot fail to observe the unpreparedness of the growers of India for this fall in price, as is evidenced by the rate of progress in the succeeding period having again increased even under a still further decline, though not at so rapid a pace as that which happily characterizes the two last decennial periods, arising partly from higher prices prevailing in Liverpool, and partly from better cultivation, combined with greater facilities of internal communication, and speedier correspondence with Europe. The variations in the rate of supply in the present day are chiefly caused by the fluctuations in prices in the Liverpool market; stimulating doubtless to a certain extent the industry of the native grower in times of high prices and deficient supply, but mainly supplied from the quantities which otherwise would have been exported to China direct from India.

The proportions, the several divisions of our Indian empire have furnished of these imports of cotton in the last nine years, appear thus:

	Bombay.	Madras.	Bengal.	Ceylon.	Singapore.	Total.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1850	112,408,140	5,571,450	85,789	807,363	..	118,872,742
1851	112,373,721	6,460,782	1,175,940	2,616,519	14	122,626,976
1852	80,492,272	3,808,224	557,088	64,848	..	84,922,432
1853	159,069,494	12,718,114	7,660,242	1,817,642	582,668	181,848,160
1854	110,179,104	5,426,576	1,144,416	3,044,135	47,778	119,836,009
1855	137,080,232	6,310,528	86,912	1,692,544	..	145,170,216
1856	168,263,536	8,696,128	1,418,928	1,966,384	151,648	180,496,624
1857	228,521,328	17,245,424	2,534,560	2,036,832	..	250,338,144
1858	123,769,408	5,438,944	190,400	3,323,824	..	132,722,576

Our statistics of the Indian export trade do not extend back sufficiently far, to allow of any correct idea being formed of its earlier features. The earliest period at which we have any statistics bearing on the subject, is of the port of Calcutta from the years 1795-6, at which date almost the whole of the cotton exported from India came through that port. Even since that date a small quantity of the produce of India has gone direct to the United States, but except the novelty thus presented, the features are very incongruous and devoid



of interest. It is only since the year 1834-5 that the statistics at our command assume a complete form. The quantity exported by each of the three Presidencies since that date may be conveniently exhibited in annual averages of quinquennial periods thus :—

	Bombay.	Madras.	Bengal.	Total.
	lbs.	lbs.	lbs.	lbs.
1835-9	91,309,665	13,576,300	31,380,575	136,266,540
1840-4	141,802,600	18,992,400	13,976,820	174,771,910
1845-9	133,886,826	13,969,569	9,900,497	157,756,892
1850-4	179,838,889	18,770,256	22,663,188	221,272,333
1855-8 (average 4 years)	222,076,713	15,962,242	9,702,974	247,741,929

And we cannot fail to observe the important part the Bombay Presidency has hitherto played in furnishing even these supplies. In Bengal, there are evident signs of a decay in the cultivation, at all events for export, while Madras is yet quite unable to extend its sphere of production, as is amply evidenced by its sluggish response to an advance in prices. Even in the Bombay Presidency, the low-price years 1843-49 produced a great decline in the export trade ; but this is not surprising, considering that in the United States, it was stated, the planters were at the time for the most part working their estates at a loss.

The distribution of this export has not of course been made entirely to Great Britain, for adopting the same system of averages, the statistics show it to have been, to—

	Great Britain.	China.	Other parts.	Total.
	lbs.	lbs.		lbs.
1835-9	51,161,059	85,105,481		136,266,540
1840-4	88,808,685	85,903,225		174,771,910
1845-9	70,757,425	85,427,227	4,572,240	157,756,892
1850-4	130,557,160	84,332,450	6,382,723	221,272,333
1855-8 (average 4 years)	185,220,082	42,973,429	10,530,418	247,741,929

The steadiness thus apparent in the rate of supply to China until the last period, and the then sudden falling off, is very remarkable. It will be at a glance detected, that though the supply to this country has of late considerably increased, the total export from India has not proportionately done so—in short, that as the demand for Europe increases, and raises the market price, that for China almost in an equal ratio declines, showing it to be subservient to, and contingent on, the British demand; and that in years of low prices, when the export from India to Europe is small, a corresponding increase takes place to the China market. By the figures adduced we further see, that while the increase in the total exports from India in the last twenty years has been only 82 per cent., in the exports to Great Britain it has been 262 per cent. The simple deduction therefore seems to be, that our increased importation of raw cotton from India, attracted by a high price ruling in the home markets, does not necessarily imply an equivalent larger growth in India itself, as part of that shown in the last period is made up by a proportionate decline in the quantity exported to China from Calcutta and Bombay, the Chinese apparently not being purchasers of the raw material at the high prices current in London and Liverpool.

While on the subject of the distribution of the exports from India, it will be remarked that there, as in all the cotton-exporting countries of the world, the quantity exported to continental Europe has amazingly increased in the last period 1854-58, which is before shown only under the exports to "other countries." In that period, the following were the quantities exported to continental Europe :—

		lbs.
1854-5	..	1,160,660
1855-6	..	2,235,916
1856-7	..	13,389,719
1857-8	..	33,846,464

Much controversy has arisen as to whether the increase apparent in the exports of raw cotton from India in the last twenty years, is really the result of an increased production. If we were to consider the wants of the natives of India to have remained stationary, the greatly increased exports of British cotton manufactures thence to India go far to make up for the increased exports of cotton hence. Looking at the Table furnished in Dr. Forbes Watson's excellent paper read before the Society of Arts in the last session, the weight of cotton exported from this country to the East Indies in manufactured goods, as compared with the weight of cotton exported from India, taken in annual averages of quinquennial periods, appears to have been

	Weight of Cotton in British Cotton Manufactures exported to India.	Weight of Raw Cotton exported from India.
	lbs.	lbs.
1840-4	49,837,791	174,771,910
1845-9	59,118,201	157,756,892
1850-4	87,789,303	221,272,333
1855-7 (average 3 years.)	101,993,544	272,395,875

But the basis upon which the weight of exported goods is here calculated, does not make any allowance for the difference in the class of goods now exported. The exports of cotton goods to the East Indies now run much more on fine goods, the coarser kinds, which in former years were exported thither, are now scarcely ever shipped, so that the increase shown in the weight is perhaps a little overdrawn; still making allowance for this, if we, on the other hand, deduct for the decline in the exports of Indian piece-goods, the increase in the entire weight of cotton exported from India is not large. There is, however, abundant proof that the wants of the people have not remained stationary, the immenso increase in the demand for, and production of, all East Indian produce, cannot but have given to them the power of satisfying a wish for greater luxury, which with them displays itself in the decoration of the person. As instancing the demand for Indian produce of all kinds, the rate of increase has been, in the computed real value thereof imported into the United Kingdom in the last five years, as compared with the declared real value of British manufactures exported thither, thus:—

	East India produce imported; com- puted real Value.	British Manufac- tures exported to the East Indies.
	£	£
1854	12,973,613	10,025,969
1855	14,758,721	10,927,694
1856	19,373,524	11,807,659
1857	21,094,301	13,079,653
1858	17,407,185	18,283,852

And therefore we may infer, that there has been an increased internal demand for and consequent production of native manufactures, even though the quantity of the raw and manufactured cotton exported has not greatly increased. And there are good reasons which substantiate this view in another manner, thus: taking the effect of prices upon the Indian market, we shall see that the quantity available for export has increased, while the price has actually declined, thus in decennial averages :—

	Price per lb. of East India Cotton.	Cotton imported from East Indies. <sup>1</sup>
	<i>d.</i>	lbs.
1790	21	422,207
1800	14	6,029,822
1810	15½	27,783,700
1820	8½	20,294,400
1830	5	12,324,200
1840	4½	77,011,839
1850	5½	118,872,742
1857	5½	250,338,144

If, therefore, as is here shown, the imports from India have continued to increase, notwithstanding a comparatively reduced price, it is evident that the market value of the article in the Indian market is comparatively lower, either arising from an increased production, or an improved and cheapened mode of cultivation; and applying a very commonplace rule, this fully proves that the people are permitted and will exercise a greater consumption under the cheapness, necessitating an increased production if a profitable one, and which, if it were not, would force a corresponding increase in price until it became so.

We may now proceed to notice more particularly the extent of cotton cultivation in India; the districts in which this cultivation is carried on; the causes which have prevented or retarded its extension; and the means which have been pointed out as necessary to be employed in the accomplishment of this most important and national object, viz., an increased supply of Indian cotton, to do away with

<sup>1</sup> Though the *imports into the United Kingdom* are here adopted, the first quantity representing the entire exports from India (all the cotton then being exported to this country), the deductions drawn from them are quite correct.

the present suicidal dependence on one source for the maintenance of our position as a manufacturing nation.

The extent of cotton production in India is a question which has been much canvassed of late years, and various estimates have been made, all more or less differing according to the basis upon which they have been formed. Major General Briggs assumed that 375 millions of pounds weight are required annually by the natives for a portion of their dress weighing  $2\frac{1}{2}$  lbs., and that for various domestic uses double this quantity is required, making the total consumption in native manufactures not less than 750 million pounds. Dr. Wight, on the other hand, sets down the consumption at 20 lbs. per capita, or 3000 million pounds. This estimate in the opinion of the late Dr. Forbes Royle is too high, but others have even considered it too small. It may be remarked, that such a quantity would require for its production nearly twelve times the surface, assumed as the extent of the cotton farms, in a report made to the Government at the time. Dr. Forbes Watson estimated the total quantity grown to be 2,432,395,875 lbs., distributed thus :-

	lbs.
For Internal Consumption ..	2,160,000,000
Exportation .. ..	272,395,875

being nearly equivalent to double the quantity grown in the United States. He (Dr. Watson) assumed *twelve pounds* of raw cotton to be employed by each one of the native population, or 180 millions of people ;<sup>1</sup> and taking Dr. Royle's average of the yield per acre to be 100 lbs., it follows necessarily that 24,300,000 acres are at present under cotton cultivation. Dr. Watson in working out his results, has adopted a mean from former estimates ; but even this makes the consumption of cotton per capita *sixty per cent.* greater in India than in the United Kingdom. At the date of the last census in 1851, the population of the United Kingdom was 27,724,849 persons, while in the same year the consumption of raw cotton was 205,086,622 lbs., or equal to  $7\frac{1}{2}$  lbs. per capita, whereas the basis of Dr. Watson's estimate is  $4\frac{1}{2}$  lbs. more for each individual consumer in India ; and it has been objected that the manufacture of so large a quantity under the rude modes of manipulation existing there, would require an immense proportion of the native inhabitants to be continually and exclusively employed in it. It must be acknowledged however, that the people of India differ essentially from Europeans, in that cotton is the material employed for their almost entire clothing, whereas in this country, the additional employment of wool, flax, and silk will pro-

<sup>1</sup> This includes the population in the native and so-called independent states.

bably swell the total quantity of textile substances consumed per head to *sixteen pounds*, the wool and cotton alone amounting to 12 lbs. In India, in addition also to being worked into every kind of fabric, from the coarsest canvas to the finest muslin, an immenso quantity of cotton is employed for stuffing and like purposes, requiring little labour in its preparation. The native custom of burning the whole of the clothing and bedding of the dead is another frequent source of consumption unknown in this country, and which must be taken into account. I am disposed to think therefore, that Dr. Watson's estimate is about as fair an approximation as can be arrived at with our present means of judging.

If then it be correct that upwards of twenty-four millions of acres are at present under cotton cultivation in India, and which it may be remarked is nearly four times the area of that under cotton cultivation in the United States, it must be remembered that this immenso area is scattered over, in a more or less degree, the whole of the great Peninsula, and yet hardly a single district throughout the whole extent of this magnificent territory is developed to one third of its capabilities, or rendered sufficiently productive. The Bombay Presidency, containing 76,841,600 acres, and a population of 11,109,067, is calculated by Mr. Chapman to contain 43 million acres of land admirably adapted to the growth of cotton, greater by nearly one-tenth than the extent of such land in the whole of the United States as estimated by their Government; but if only one-fourth of this extent were cultivated, and each acre produced on an average 100 lbs. of clean cotton, (which by improvements it is reasonable to expect may be doubled,) we should have 1,075 million pounds, or equal to the quantity at present imported into the United Kingdom from all countries; and it is said this quantity might be sold to a profit in Liverpool at 3½d. per pound.

The chief cotton-growing district in the Bombay Presidency at the present day is Guzerat, which embraces under that name Surat, Broach, Kaira, Ahmedabad, and Kattywar, and in all of these there are millions of acres suited to cotton cultivation lying utterly waste and unproductive, nevertheless this district is said to yield 56 per cent. of the whole cotton crop of the country available for export. Its average exports of cotton to Bombay from 1834 to 1846 alone was 60 million pounds, but in 1840-41 they were better than 96 millions. The yield per acre of cotton in Guzerat is said to vary from 250 lbs. to 2000 lbs., one-third of this nearly being clean cotton, or from 80 lbs. to 600 lbs., the average yield to good cultivators being 150 lbs. per acre; and this fact furnishes irrefragable proof and illustration of the immense capability of the soil of India for cotton cultivation when properly

conducted. Experiments in Broach have demonstrated, that on moist (not damp) land, of which there is abundance, 600 lbs. of clean cotton can be produced per acre; in fact, the average yield of irrigated land there, is stated by Mr. Landon at from 350 lbs. to 400 lbs. per acre, and this while the entire produce in the United States ranges from 150 lbs. to 400 lbs. The collectorate of Kandeish, after 2306 square miles are deducted for roads, rivers, mountains, villages, and unarable lands, is said still to possess 6,058,640 acres every way suited to the growth of cotton; and this is only one of the sixteen collectorates in the Presidency, which is again only one-sixth of the vast territory even subject to British rule in India. Seinde, again, as attached to this Presidency, embraces a large tract of land adapted to the purpose, with all the advantages of a considerable system of internal navigation, and the means of cheap freightage and a thriving commerce; at present it labours under the disadvantages of a spare population, which will, however, doubtless eventually be attracted from other, in this respect, more favoured spots. In the Bombay Presidency it is stated 2,890,279 acres, or one-twenty-sixth of the entire area, is under cotton farm cultivation; and that, in 1854, 52,313 acres were reported as being planted with American cotton, and the extent of the latter may now be said to be three times as great. In old times the Presidency supplied Bengal with considerable quantities of the raw and manufactured material, and continues still to be by far the most enterprizing in the matter of production; indeed, it is alone in this Presidency that the quantity available for export has shown any signs of increase.

The Madras Presidency, containing 84,537,600 acres, and a population of 22,301,697, has made little progress in the cultivation, either for home consumption or export. In the year 1854-5, it contained only 917,374 acres of land under cotton farm cultivation. At that date there were 2,320 acres under the American kind. Dr. Wight reported that the four southern provinces of Coimbatore, Salem, Madura, and Tinnevely, contained an area of 28,500 square miles, of which 2,480,000 acres were readily susceptible of cotton cultivation, and certainly capable, with a proper application of skill and capital, of yielding 100 lbs. per acre of clean cotton, or, in other words, an aggregate of 200 millions annually. The export cotton trade of Madras has hitherto been comparatively insignificant, though we may reasonably hope that ere long it will become a source of considerable supply.

The Bengal Presidency, containing 185,502,720 acres, and a population of 49,855,137, consumes in its native manufactures nearly the entire cotton crop, yet it possesses the excellent cotton growing

district of Berar, perhaps the best field in India, were the means of transport and other matters sufficiently progressed. The export trade in cotton has been very small; the largest quantity ever exported was in 1817-8, in which year from the port of Calcutta there were shipped 75,252,225 lbs., and, excepting one or two attempts at an increase in times of high prices, it has since that date continued to decline; by far the larger portion of that exported being to China. It is to be hoped, however, that the opening up of the Grand Canal in the Doab will prove to be attended with a considerable increase in the growth of cotton for the British market; the extent of land it is said to be capable of irrigating is 5,400,000 acres, which had become utterly waste for want of moisture; if one-third of this quantity only were under cotton cultivation, we might have an increased export from this source alone of 180 million pounds, that is: if the opinions are correct as to its adaptability to the cultivation. The great cotton field of Berar, however, presents perhaps the largest scope for action, were it but put on the same footing with the seaboard districts in regard to means of transport, there is little doubt but that a breadth of land would then become available to supply the full demands of Great Britain. There are however political considerations connected with the question of a railroad into the dominions of the Nizam which perhaps weigh against its expediency. The North-Western Provinces and the Punjab contain 105,022,720 acres, and a population of 40,025,975, showing it to be the most densely populated district of India; and here again there is reported to be thousands of miles of good land free to a great extent from jungle and timber and adapted to the cultivation of cotton; and yet this great area does little or nothing in an export trade, though the fact of their lying out of the reach of the monsoons, abounding with streams and rivers fed by the waters springing from the mountains of Cashmere and Kunawur, renders it certainly fitted to become a future source of supplies. There is further attached to this presidency the kingdom of Oude, containing 15,192,320 acres, and a population of 2,970,000, and the Eastern Settlements, including Pegu, estimated to contain 55,492,480 acres, but very thinly inhabited, the number being estimated at 1,639,493; making the total area of the presidency to be 361,210,240 acres, and the population 94,490,605.

Looking back through this meagre and scattered data, and comparing the facts with those presented on the subject of the United States, they appear very startling. India containing in its three Presidencies (exclusive of the native, or so called Independent States) 522,589,440 acres of land, and a population of 127,901,369, or about one person to every 4 acres. The southern and cotton growing states



of America (including Texas), containing about 530,000,000 acres, with a population of about 5,718,925, or one to every 90 acres. It is astonishing that while from the former the average export of cotton in the 4 years ending 1858, has been 247,741,929 lbs., that from the United States, during the same period, was 1,131,690,697 lbs., and this arising from the fact that the present means and system of cultivation does not admit of a successful competition in regard to price. The soil of India having been worked during thousands of years, while that of the United States is comparatively new, is a valid reason for a discrepancy existing, inasmuch as that it requires *twice as much* land in India (taken throughout) to produce 100 lbs. of clean cotton as in the United States. The cost of the land is about the same. But then the important item of labour is about 80 *per cent.* cheaper than in the United States. Again the States have their Mississippi and magnificent rivers; our Indus and Ganges avail us little in the matter of cotton supply, what the former may do remains to be demonstrated; one point is certainly proved, and that is, that with a yield of 100 lbs. per acre, under facilities of cheap transit, India can, even under the present system of cultivation, sell cotton in Liverpool at a price, which making allowance for inferiority of quality, is more advantageous to the manufacturer than other kinds for employment in about 70 per cent. of his business. But we must not therefore conclude that because throughout the length and breadth of the peninsula there is 2,400,000,000 lbs. of clean cotton now produced, that any large portion of it can therefore compete on those terms,—much of it is grown at a great distance from a shipping port, and though railroads may in a measure meet this objection, the yield obtainable though sufficient to maintain the production for consumption at the spot, would not be able to sustain itself in a competition in our markets. A large portion of it is grown in inaccessible spots for native use, and would not therefore enjoy those advantages, to fit it to compete with America, the future increase must rather come from its systematic cultivation in soils chosen as favourable to its growth, and places having ready means of transit to the selling markets.

The question of the relative abilities of the United States and India to compete for the supply of our great staple manufacture, is in the main contingent on the facilities of cheap labour and transit. For the immeasurable superiority of the soil of Texas, with its 300,000,000 acres, as compared with our Indian possessions, which do not seem to be capable of producing a greater average yield, under the present careless system of cultivation, than 100 lbs. of clean cotton per acre (although as before said, where care has been employed, and particularly by the application of judicious irrigation, greatly increased results have been ob-

tained), is only counterbalanced by the relative scarcity of labour in the former, and perhaps an almost equal rate of charges for transit as compared with that of our Indian supply, which is now for the most part obtained from the coasts and spots having facilities of easy and comparatively cheap communication, and as instancing the importance of this *transit* on the abilities of India to supply our wants, a table furnished by Mr. A. C. Brico to the India House, and quoted by Dr. Watson, will serve to show, that while in those parts contributing to the exports from Bombay having means of easy transit, the production for export has increased, other parts with long coast navigation and at a distance in the interior have even declined, — thus hope may exist from this fact alone, that with the opening up of the means of conveyance, a steady and considerable increase will take place.

The causes which have prevented or retarded the cultivation of cotton in India for the British and other markets, is a subject of great importance, and may be shortly touched upon here. The discussion or analysis of the several deterrent causes of social and industrial progress, either in detail or generally, point out incidentally the remedies and the means necessary to be employed for the regeneration of India, and the proper development of her vast capabilities as a cotton growing country. The extreme poverty of the native growers is acknowledged by all who have had the opportunity of observing them, and among the Government officials, from the Governor-General to the Revenue collector, it is an admitted fact ; hence the secret of the “social despotism” exercised by the exorbitant money-lenders, who in reality grasp the fruits of the grower’s industry. The want in India of purchasers on the spot, with improved modes of cultivation, and of cleaning and packing the cotton for the market is an equally admitted evil. The system of advances to cultivators of whatever description of produce is of general practice in India, and if it were conducted on proper principles would be of great advantage, it might be adopted by English capitalists to a large extent, and be productive of mutual advantage and profit. As it is, it is well known that the “middlemen” exact exorbitant interest for their advances, and when the cotton is received by them from the ryot, it is and always has been carelessly treated, adulterated, exposed to the weather and to dirt, to the great deterioration of its value. Hence much of its present inferiority in price to the American produce in the English market, and an extended demand for it only in case of a dearth of cotton from the United States. Under the present order of things the systematic adulteration of Indian cotton will

always exist ; the poverty of the native growers and the absence of English agents to make reasonable advances to them on the spot, compels them to borrow money at a ruinous rate of interest, and to sell their cotton much below its real value, the consequence is, they become indifferent as to its quality or condition, in fact as to anything pertaining to it except *mere quantity*. Ignorant and a prey to the native money lenders, improvement with them in the art of cultivation is entirely out of the question ; they are unassisted, incapable of progress, and bound as in fetters of iron, to the imperfect modes of culture pursued by themselves and their forefathers. Under more favourable circumstances however they would make greater advances in improvement, and by the aid of knowledge and implements and machines of European or American construction, speedily and successfully compete in favoured localities with their rivals on the banks of the Mississippi.

The want of a regular rotation of crops in many districts, and the almost universal mismanagement in the cultivation itself, or especially in the gathering of the produce and the cleaning and packing processes, tend to depreciate the cotton at least *fifteen per cent.* in value, and at the same time to render it (except at intervals) almost unmarketable in the Liverpool market, because the buyer there expects a dirty article in exchange for his money.

The absence of a regular or steady demand for the article, and the fact of the prices always fluctuating according to a sanguine or gloomy prospect of the coming crop in the Southern States of America, regardless of the condition of that in the East, operates as an effectual bar to the steady progression of shipments of Indian cotton to this market ; and this because it is well-known that American cotton will command the preference, and that the Indian varieties will only realize remunerative prices readily when the English manufacturers are threatened with a real or fancied scarcity in the supply from New Orleans. One great reason therefore of cotton not being extensively grown in India for export must be palpably evident. It is because the cultivator and the merchant are never sure of their produce realizing in the English market a sufficiently remunerative price—it becomes a speculation entirely, and they cannot afford to trade on contingencies ; especially the cultivator, because he is ever at the mercy of his insatiable creditor, the money lender of his village, and should he be disappointed in the price actually given, he would find it difficult to provide for himself and family the bare necessaries with which he is compelled from his position to rest satisfied. I do not mean to insinuate, nor do I think, that fault lies in any quarter, for

it is the natural result of circumstances. The course now adopted by the Government of aiding the march of civilization and enlightenment by the means of intercommunication and transit, will do more than any other thing towards its eradication ; and until this is effected, the natives of India will never increase their growth of cotton for export to the extent of its capabilities.

As the Indian cultivator shall be freed from this unnatural incubus the production will increase—he will be able to cope with his American competitor, and his position will be then doubly improved, when the success or failure of his own crops shall impart the tone to the market, and influence our prices accordingly. That it is possible for them, with facilities of cheap transit, to compete with the Americans as cotton growers, cannot I think, admit of a reasonable doubt, but in order to do so they must have immunity from the tyranny of the “middlemen”; in short they must be so elevated and enlightened as to be able to triumph over or resist the machinations or impositions of the money lender ; and there is every probability that ere long European houses, one and all, will find it to their advantage to furnish to the grower all his requirements on a moderate charge, and furnish machines and instruct him in their use. Raw cotton can be purchased in most of the cotton districts at from  $1\frac{1}{2}d.$  to  $2d.$  per lb., which price leaves the ryot a fair rate of profit, considerably higher than he can ever expect from the grasping middleman. It is further found that, notwithstanding the enormous cost of carriage to the coast and of freightage, insurance, and charges to England, it can be sold in the Liverpool market at from  $3\frac{1}{2}d.$  to  $4d.$  per lb. Much of the present inferiority of the East India cotton arises from the systematic adulteration and carelessness of the picking and cleaning, all of which is susceptible of amelioration or entire removal, and the disparity therefore between the price of American and East India cotton will be greatly lessened. That the produce of India can be considerably improved, and brought at least to the standard of “American uplands” with an increased yield is a fact of great interest, and when we look at some of those samples of East Indian Egyptian seed cotton on the table, yielding even a greater quantity of produce per acre than the indigenous kind, and worth upwards of 60 *per cent.* more, we may reasonably conclude that there is every room for improvement, and for our Indian possessions becoming the first cotton growing country of the world.

It is universally acknowledged that means of cheap transit are essential to the development of India's industrial resources, and its onward march in the path of civilization and material improvement,

and that without such means the culture of cotton by the natives will always be on a limited scale for export, for we have it on the best official authority, that transport charges have more to do with the cotton movement in India, than perhaps any one single deterrent cause, and the reduction of even a halfpenny per pound or so would give such an impetus to it as would lead to a supply equal to a large portion of our wants as a manufacturing nation from this source alone. "The cost of conveyance" says Mr. Ashworth, in his admirable lecture before the Society of Arts, "of a bale of 400 to 500 lbs. of cotton a distance of a thousand miles on the Mississippi river has been as low as one dollar and ranges from that sum to one and a-half dollars, or 6s. 3d., and it is therefore in commodious and cheap conveyance more than in cost of growth that the present advantage of America over India as a cotton growing country is to be accounted for." Looking at the expenses of land and coast carriage in India, we find it interferes considerably with the extension of the export cotton-trade; for instance the cotton producing districts south of the Nerbudda, and those of Oomrawutty and Nagpore, in Berar situated remote from Mirzapore on the Ganges, lying between Benares and Allahabad, where if we take their average distance to the entrepôt in question, each pound of cotton costs in transit  $2\frac{1}{2}d.$  per lb. This heavy charge arises from the fact that the cotton is exported on the backs of oxen, each carrying 160 lbs., at the extreme rate in fine weather of seven miles a day. But this is not all, it has then to be borne by water carriage little short of five hundred miles further, viz. to Calcutta, from which port if conveyed to England, any idea of profit is absolutely out of the question, unless a much higher range of prices should exist at Liverpool than is consistent with the rates usually current. Writing of these cotton districts and on this point General Briggs informs us "that in the absence of a defined and good road, a drove of several hundred head of cattle requires to be constantly watched and prevented from straying on the march, and this leads to the necessity of travelling by day in the hot weather, when the thermometer is seldom less than  $100^{\circ}$  and frequently  $130^{\circ}$  of Fahrenheit. These droves are seldom so few as a hundred and often exceed a thousand; every morning after daylight each has to be laden, and before the operation is over the sun is already high above the horizon. The cattle have then to proceed at the slow rate of two miles an hour, and seldom perform a journey of more than eight or nine miles a day. The horde generally halts one day in seven. If the caravan is overtaken by rain, the cotton becoming saturated with moisture, is so heavy as to prevent

its transport on the cattle, and the roads, if lying through the cotton-ground, are such that men even sink to the ankles at every step and cattle to their knees. It may easily be supposed that under such a calamity the merchant and the carrier are both ruined."

It is impossible to deny that the subject of internal communication in India, had not received that attention which its vast importance demanded, until, chiefly in consequence of the facts elucidated by Mr. Bright's Committee, the pressure of public opinion in this country had been brought to bear upon the Home Government of India. There is however good reason for believing that such matters now receive the anxious attention of the authorities, and it is gratifying to think that within probably three years nearly five thousand miles of railway will have been stretched through most important divisions of that vast and hitherto commercially inaccessible country. The means however by which further transit facilities shall be afforded involve a grave subject of consideration. Every one concurs in the assertion that the greatest civilizer and improver is the means of cheap and rapid transit, and latterly the Government has readily given its support to the projects set on foot with that view. It has sanctioned railroads, which involve an expenditure of capital of near £40,000,000, and on which an annual charge of nearly two millions sterling will accrue, and it is certain that a long period must elapse before taken as a whole these will pay the guaranteed rate of interest. No one would attempt to deny the prospective importance of the railroads now in progress, but, perhaps excepting some seaboard districts which might be advantageously opened up by such means, it is probable enough has been done for the present in this direction; and the general feeling now exists that sufficient pecuniary aid has been granted to this description of transit, and that attention ought to be directed to the formation of canals and to measures calculated to render as far as possible the different rivers navigable. The climate of India is such that the means of irrigation is as much a matter of importance as transit; it is equally the interest of the cultivator to produce good crops as to have the means of conveying them to a better market. Moreover many kinds of produce which can ill afford the cost of carriage by railway *could* be borne by this means without the uncertainty and deterioration which is entailed by the present bullock carriage. It is asserted, and with much force of argument, that canals, unlike railways, will, with the improvement of agricultural knowledge there, very soon defray their cost out of the income from irrigation, while the expense of transit by that means is immeasurably less. The labour too employed in the construction of canals is for the major part the mere hand labour which in India is

cheap and comparatively abundant, while in the case of railways the European civil engineers and mechanics all receive far higher wages than in this country, while they at the same time, from the greater temperature, are fitted to perform but half the work. Throughout the larger portion of India, if we except the Western Ghats, the nature of the country is admirably adapted to the formation of canals. The Government has extended a helping hand to at least one such enterprise, and will doubtless in like manner do so towards others where required. We understand that there is now the prospect of every effort being made to open up the Godavery, the great highway into the cotton field of Berar; and we have the opinion of Colonel Cotton that the navigation of the Godavery alone would do much to restore a large district in India to a state of agricultural prosperity, and to raise its inhabitants in the scale of social well-being; and the Parliamentary Committee on Indian Affairs put it on record that "it has been fully ascertained that cotton of such a quality as to compete on equal terms with that of America can be produced at a paying price in Bellary, Cuddapah, Coimbatore, and Tinnevely;" but it is also added that the cultivators had to encounter great difficulties and drawbacks from the want of easy communication between the interior of the country and the port of shipment.

So far then Government is affording evidence of its willingness to promote works calculated to assist in opening up the country, and in affording those means of irrigation so essential to the development of the resources of the country. Thoroughly to accomplish this much, will nevertheless depend on private enterprise directed on the spot. In addition however, to the transit and other difficulties now in course of removal, two causes especially preventive of efforts on the part of both the British and native capitalist to expend on schemes for such a purpose have been in operation, namely—the uncertain tenure of land, and the imperfect administration of justice. With regard to the latter, the majority of those examined on the point before the Colonization (India) Committee, were agreed as to the great room for improvement in this department; one involving the rights of property and other questions of great moment. With respect to land tenure, public opinion both in this country and in India has gradually arrived at the conclusion, that not only should lands now in the hands of Government be finally sold in fee simple, but that the redemption of the land tax in all parts of India cannot be too soon effected. For a number of years in a few remote parts of India, Government has granted land in what has been so far entitled to be called "fee simple," but attached to the transfer were certain privi-

leges which so far have tended to nullify the advantage. In December 1858 the Home Government sent orders to India, which we believe are now being acted upon, and which do so far facilitate the transfer of land in the manner wished for. Much however, in this way still remains to be done, and it is to be hoped that the subject will at an early date receive the attention of the authorities, both here and in India.

With reference to the legislative enactments affecting the Cotton Trade of India with this country, a few words may be ventured upon, as well as upon the question of the currency as having an important bearing on the general welfare of the country.

The course to be pursued by the Government of India in the matter of the Cotton Trade has not been clearly defined, and though the unquestioned policy of free and unfettered trade in this as in every other article may be said to meet the question, it does not in fact do so. The expenses of government in India must be defrayed, and legislation, therefore, in the matter resolves itself into a question of to what extent, if any, the article among others shall subscribe to the revenue. We, as a manufacturing, rather than as a producing nation in England, have come to recognize the benefit of exempting the raw material from taxation, on the ground that the employment of the people in the trade to which it indirectly ministers, more than compensates for the loss, and further that as an article almost of necessity, and certainly conducive to the comfort and happiness of the people, it does not form so fit a subject of taxation as articles of luxury, which in like manner can better bear such an imposition. It may be remarked, that no special legislation becomes necessary, and moreover that it is an undeniable advantage to the country to find a consumer for its surplus produce, the growth and export of which, therefore, should not be checked by the imposition of any duty. This is generally admitted I think, but India must not be viewed solely as a producing nation. India may and does produce twice the weight of cotton exported by the whole of the United States; the question arises—is it India's advantage to export the whole of this immense quantity, and thereby become a customer to Lancashire of an almost equivalent extent? It is, of course, the interest of this country that it should do so. Or, should India retain her raw cotton, and clothe her people unaided and independent: the whole difficulty is one of figures and cost. In the ordinary course of events the river will find its own bed adjusted by the law of supply and demand, but to predict the future course of the government becomes a matter of considerable difficulty, for in this is also involved the troublesome consideration of the occupation of the people.



It is a fact that cotton can be carried from the producing districts often 200 or 300 miles inland to the seaboard, thence to Bombay and to Lancashire, and there be spun and wove, and travels back in its manufactured state to the very places whence the raw material first came, and still enters into competition with, and is in fact displacing the twist, not to say the cloth, which is spun in the very cotton-field itself. This tends to show that Indian labour is at present unprofitably and disadvantageously employed in spinning and weaving, and by imposing a duty on raw cotton, or an import duty on British twist and cloths, we are giving a premium to the maintenance of an unwholesome condition of trade ; but here the question arises, why then has not more been drawn out from the country ? A number of circumstances some natural, some artificial, are the reasons, and these cannot be overcome but by time. First and foremost, the great difficulty of inefficient means of transit and communication, and the poverty and ignorance of the larger part of producers and consumers, who in selling the cotton obtain but a tithe of that we pay for it, and, in purchasing the English manufactured article, in a similar way become the sufferers by the craftiness of the middlemen or native merchants, until it is clear, the poor ryot finds it more to his advantage to retain it for his wants, and during the hot season, when little labour in agriculture is required, convert the raw material by hand into coarse and heavy manufactures ; but the means of transit, which are undergoing great improvement and extension, will afford the surest guarantee of the removal of this unnatural incubus on the native and the country, and while enriching both, form a source of great advantage to our trade. Meantime it may be questioned, whether it is the proper policy to be pursued by the Government to levy a tax on imported British cotton manufactures, which tends to foster the native hand manufacture ; so far from the labour not being required, it is on the contrary greatly needed, the cry has lately been, the want of labour in the cotton fields for picking and cleaning. The cotton districts are among the most thinly peopled of India, and when we remember that it requires 750 adults, working 10 hours, to free from seed one ton of cotton, we can comprehend how the diversion of part of this labour has effected an already deficient supply. It is chiefly in the cotton districts that cotton spinning and weaving maintain their position, and interfere with cotton picking and cleaning. It is better that native manufacture should die out, unless it can sustain itself without protection. Let Government do also all in its power to disenthral the poorer native from the vicious influence of the middlemen, and the people will devote themselves to such occupations as will be most to their own interests, which will I imagine at present be

in the proper production of the raw material Great Britain so much needs, and reaping from it a fair mede of profit, will, with the cheaper and better adapted cloths of Europe, be placed in a position to enjoy greater luxuries of life. India should on no account be governed for the English. I would deprecate the course now advocated, if it simply tended to help British shipping and Lancashire mills, but if the import duty on twist and calicoes imported into India is continued, or even raised to a very great extent, hand spinning and weaving must die out, and we merely prolong the struggle to make the cotton yield the grower in India less money, or to make it cost the spinner in Lancashire more. While a tax is thereby levied on the consumer of either native or British fabrics in India, which is paid to the native manufacturer to protect him in his unprofitable business. The case is different with mills conducted on English principles and with English machinery, if Government decides that it will be a national object to foster such, most of the objections to an import duty on twist and cloths vanish. I believe, however, the true policy of government is primarily to legislate so as to drain the raw cotton out of the country, and create a demand for our manufactured goods in lieu of those now manufactured in India. To acquire an increased interchange of products with other countries is the aim of every aspiring nation ; to sell as much of its produce, and receive in return foreign articles to please the taste or fancy of the people, is one of the greatest incentives of trade, but it must be admitted that if the ingredients of manufacturing success exist, India acquires more wealth by itself manufacturing either for its own wants or for export.

We have heretofore considered the native cotton manufacture of India only as that conducted under the old and rude hand processes ; but we must now regard the matter from another and distinct point of view. We will look at the advantages accruing to India from adopting our more improved processes for her own benefit, and consider its seeming practicability. We know that the quantity of the raw material employed in the Indian native manufacture, is more than double that imported into this country, and this under all the disadvantages of the present expensive and wasteful mode of cultivation and manufacture there ; how much the demand might expand were the processes economized more in accordance with that we employ, may be judged by the great development we have seen as having occurred in our own trade in the past century. That there is abundant room for economy is amply proved in the successful competition of British manufactures in all those parts of India into which they have gained access ; and this economy must in part come from the substitution of machine for hand labour. The cry of there being no other occupation

for the native population, is certain to be raised against the destruction of the native trade ; but its fallacy was never more palpably evident than in this particular case. Taking India as a whole, it is the consumer of its entire production ; what advantage then can it enjoy in spending one week in the manufacture of a piece of cloth which can be as well made in one day ? It is argued, that throughout the dry season, when vegetation is checked, there is no occupation for the people in agriculture, and that it is then they are employed in spinning and weaving for the wants of the coming active season ; if this applied in its full sense each family would work for itself, and British manufactures would probably never force their way against the hand weve fabrics so long as it existed ; and if, on the other hand, it is merely a class trade followed only by a limited number, it is clear that the number of consumers must pay so much more, which is an additional burden upon them for the advantage of the manufacturing few. These are, however, exploded objections, and it is unnecessary further to dwell upon them ; every one now acknowledges that India's advance must be attained by aiding, and if need be, forcing its forward progress by the economical employment of science and art, especially to material and useful purposes. Whether Great Britain or Bombay can supply some of India's wants cheaper than heretofore has yet to be decided ; but it is clearly the consumer's interest to buy from the cheapest market. Granted, labour is cheap there, (that it is not over abundant however, is proved by its being too dear to compete with machinery even at this great distance) ; but it follows, that if assisted by science and art, it may become as valuable and comparatively as scarce as with us. There is the soil, the climate, all the natural facilities of production ; knowledge is all that is required to render it advantageous to more fully employ it ; and if we should throw the native weaver out of that employment, we in doing so only lead him to a more profitable one, and advance his own condition.

The question mainly resolves itself into whether Lancashire shall manufacture the material to supply the place of the native fabrics, or India manufacture for itself on the same economical principles, instead of sending the raw material several thousands of miles for that purpose, to be returned charged with all the immense attendant expenses, which apparently might be saved ? In looking at the subject—the advantages to the capitalist, the people, and the country all command attention. Unless there is a clear benefit to be gained by the capitalist, it is fruitless for us to hope that the manufacture by machinery will ever be established in India, except that Government, looking at the advantages to the people and the country, should extend a helping, or rather protective, hand ; and this is always a

questioned, if not condemned, policy. Whether it will be advantageous to the capitalist in India, when all the difficulties shall have been cleared away, to admit of a fair competition, is likely to remain an open point until some further practical solution shall have been effected. The disadvantages under which Great Britain labours in competing with any properly organised Indian mills, in having to carry the material backwards and forwards, are so great as apparently to more than counterbalance the disadvantages under which India labours. There are, however, so many contingent circumstances which enter into the calculation, and the pros and cons are so numerous, and withal so prodigious, that the whole question seems to hinge on those very contingencies.

The *first cost of mills* will in India be double what it is with us, arising from the large freight and charges which would have to be incurred in the transport of the material, and greatly increased cost of European superintendence in erection, as in all the attendant circumstances.

*Wear and tear of buildings and machinery* in India, is stated certainly not to be less than 10 per cent., while in this country it is about 5 : thus—the machinery requires renewal every 15 years, buildings every 45 years ; say, as value of buildings are one fourth of that of machinery, every 20 years or 5 per cent.

*Wages.* The proportion of “skilled” to the “mere hand labour” is in this country not much more than 1 in 10 ; but it is estimated by those well acquainted with the subject that it would in India amount to 3 in 10.

*Operatives* in India would be paid at the rate of 2s. per week, while in England the extreme average would give 15s. per week ; but as in India the day’s work effected is much less per man with other drawbacks the amount of work done is 15 to 20 per cent. less than in England, while in the rate of wages they have an advantage equal to 87 per cent.

*Skilled labour*, or that which would have to be supplied by Europeans, will be increased by 150 per cent.

*Raw Material* will cost the manufacturer in India less by all the transit, and home merchants’ charges ; and Manchester, London, transit, and Bombay selling charges on British manufactures, which would in like manner be saved.

Let us then, from this data, endeavour to work out the relative cost of manufacturing the material employed in our trade in the year 1856, the date at which the last return was made by the Factory Inspectors ; and it will better answer our purpose to deal only with the operations of spinning and weaving. We may suppose, that out

of the entire manufacture, the value of which in that year was £57,000,000, £40,000,000 was the value of the produce of those two primary operations, made up as follows :—

	£
Labour.. .. .	10,000,000
Cotton actually consumed, 856,700,000 lbs. . .	22,000,000
Wear and tear of machinery, valued by Mr. Ellison at £40,250,000, at 5 per cent. . . . .	2,012,500
Interest on capital employed, as estimated by Mr. E., £64,750,000 at 4 per cent. . . . .	2,590,000
Profit and incidental expenses . . . . .	3,397,500
	<hr/>
	£40,000,000

This would in India stand thus :—

Labour, <i>skilled</i> , say 30 per cent., or £3,000,000, would be increased 150 per cent. . . . .	7,500,000
<i>Operatives</i> , 70 per cent., or £7,000,000, would do, say $17\frac{1}{2}$ per cent. less work, say increased to £8,225,000, on which there would be a saving of 87 per cent. . . . .	1,069,250
	<hr/>
	8,569,250

Cotton is charged to us with 12 per cent. merchants' charges in Bombay, of which say 8 per cent. would be saved to Indian manufacturer; exchange 6 per cent.; and with freight, insurance, home merchant, and sale charges, and loss of weight, &c., equal to another 22 per cent., makes up a total of 36 per cent.; but as instead of using Indian cotton we use better qualities from other countries, upon which the charges are not near so severe, we may safely say 30 per cent. may be allowed for these on £22,000,000, less 30 per cent.; say on £15,400,000 . . . . .	17,380,000
Wear and tear of machinery and buildings, being on £80,500,000 at the increased rate of 10 per cent. . .	8,050,000
Interest on capital employed, being £105,000,000 at 7 per cent. . . . .	7,350,000
Profit and incidental expenses . . . . .	6,795,000
	<hr/>
	48,144,250

From which deduct Manchester, London, transit, insurance, and Bombay charges, allowing for advantage in exchange, or 30 per cent. on £40,000,000, the value of our manufacture.. . . .	12,000,000
	<hr/>
	36,144,250

And if we take from off this 10 per cent., which is charged in addition (as duty) on the British manufactures imported into India, or £40,000,000 . . . .	4,000,000
	<hr/>
	£32,144,250

These figures would appear to show the startling fact, that India could manufacture by machinery at a cost 20 per cent. less than Great Britain can sell British manufactures in the Bombay market ; and when we regard the results of Mr. Landon's efforts at Broach, and the good repute in which the projected companies are held in Bombay, as is shown by the shares of the "Spinning and Weaving Company," being quoted 58 per cent. premium (having paid a dividend equal to 16 per cent.) ; the "Oriental Weaving and Spinning Company" at 39 per cent ; the "Throstle Mill Company" at 5 per cent. ; and the "East India Spinning and Weaving Company, Limited, at par ; we might be disposed to condone any fostering spirit Government might display for the new branch of industry there. But these circumstances which we regard as showing in favour of India, are not of the great weight we might at first sight be disposed to think them. The present experimental manufacture, which we may take to be embraced in the before-mentioned mills, extend only to the manufacture of yarns of no higher number than No.'s 40 (or 40 hanks, of 850 yards each, to the pound), while in this country we spin up to 700's for useful purposes. This is in a great measure accounted for from the fact of the indigenous cotton which is used being so very inferior, for in Lancashire it is not spun into higher numbers than 16's. But supposing the exotic cotton to be grown of the finest quality, of which there seems every probability, would it then become possible to spin the finer counts to compete with the British yarn ? For that purpose the machinery becomes much more complicated and expensive, and the immense charge for interest greatly accumulates against India. The manufacture of the coarser counts must first be fully established before the latter can be attempted ; and this will take some time. That machinery can be successfully employed there in particular localities in the manufacture of low counts, cannot be doubted. It is merely a question of time and of first cost. One of the greatest drawbacks to the enterprise, is the high rate of interest paid for money there ; but ere a very few years have rolled by, this must yield considerably to the necessities of the times. As confidence is imparted, the immense stores of wealth which must be locked up there, the ill-got gains of the despised middleman, all will come out for employment in the development of the resources of the country, the increase in the value of property will yield a capital which will more than equal demand. As the people learn to bring science to bear upon their pursuits their wealth must vastly increase, and *pari passu*, despite the demand, the present exorbitant rate will be lowered nearer to our standard. As this development is going forward too,

the demand for labour will increase, and so far from its being necessary to maintain an expensive and fruitless occupation for a part of the population, the application of machinery will be fully required to maintain the advantages of a cheap labouring class to aid and feed it.

Although we find that the Companies before named have erected or are erecting in Bombay altogether 60,000 spindles and 300 looms, and adding to these 18,000 spindles in the Broach Mills and 30,000 in the Fort Gloster Mills in Calcutta, we have a total number of 108,000 spindles and 300 looms, which evidences some considerable enterprise in the matter. I still believe, however, that the policy of the Government should be to drain out the raw produce from the country, and allow the native hand manufacture to expire. India is not yet prepared to invest to the full extent in cotton mills, and so long as English capital is employed, there is little advantage gained by the people of India from the change. The present tax will bring in little revenue, being collected on only about one-twentieth of the entire Indian consumption, while the other *ninety-five* per cent., or the native manufacture, is increased in cost to the native consumer to the same extent; doing certain harm to the consumer, and perhaps under present circumstances fostering more the *hand* than *machine* manufacture.

In the early part of the evening I alluded to the currency of India, and it forms a subject of such importance to the effectual development of its trade and commerce, that I cannot conclude without a few remarks on the subject, though it scarcely comes within the scope of our present object. During the last three years of which we have accounts, the import of bullion into the Three Presidencies has been upwards of 41 millions sterling, or equal to the entire value of imported merchandize, while the exports have not exceeded two millions, leaving to have been employed in the country 39 million pounds sterling during the period cited; of course some part has been employed in the manufacture of ornaments and jewellery, but the Indian Mint Returns show that an immense proportion was converted into coin. By the increase in the trade with the east in the last few years, there has been an immense drain of bullion to pay for the produce we have imported from that source. In 1856 and 1857 alone, nearly £30,000,000 sterling was exported from this country, though some portion of this was of course on Government account; and in the year just closed it reached £15,000,000. It is not the immense proportions of this drain that is most startling, but that it consists almost entirely of silver, and this is caused, or greatly increased, from the only legal tender being silver in our Indian Colonies. To illustrate the effects of this drain upon our reserves of silver, the price of the

article in our market which in 1850 ranged about 5s. per ounce, has, within the past year, reached the enormous sum of 5s. 2½d. per ounce; to this country, this is a matter of great importance. The yield of silver in the world has steadily increased from 6 millions in the commencement of the century up to £8,000,000 per annum at the present time, and this supply does not appear capable of extension: while that of gold, which ranged about 4 to 5 millions up to 1840, has increased to about £35,000,000 annually, at which it has stood since 1853. It is obvious, therefore, that should this condition of circumstances continue, with the extension of our trade with the east, there are difficulties in store which must ultimately seriously affect the position of our own coin; but hoping, as we must do, that the difficulty will be met by the Government of India as far as lays in their power, the rest cannot be provided against, and the law of supply and demand must work out the solution. The cumbersome and expensive form of silver, as the sole circulating medium and only legal tender in India, entails great expense and waste on trade conducted on such a basis; the leading transactions between 180 million people involves an immense use of the coin; the wear and tear, and the restricted employment which is necessitated by its bulky form, imposes on the Government and the trader alike a heavy tax, and cripples the capabilities of the country. There does not appear any reason why the trade of the country should not be relieved of this heavy encumbrance by the partial substitution of a more easy form of media, such as the issue of Government notes, or at all events gold coin, and the nation relieved of the immense cost of maintaining one so expensive as the present, while we on our part would be relieved of the dread of seeing our silver coin reach an unpleasant premium, and of the enormous gold discoveries of America and Australia forcing on our gold a rate of depreciation in value equally undesirable. As indicating the feeling in the matter; for several mails past, merchants have been shipping fine gold in bars of 12 oz., which being worth 84s. per ounce, cost about £50 sterling each. These are shipped to Bombay, then stamped after assay, when they pass for 500 rupees. The novelty may be the beginning of an important movement. If these 500-rupee gold bars are found so convenient, some considerable relief may be thus granted. There are unquestionably some reforms called for in this respect, the necessity for a gold coinage must force itself upon public opinion, and sooner or later be followed by the issue of some readily convertible form of paper or credit, for which there exists a great want, which, along with other financial arrangements, it is to be hoped the Government will not delay the consideration



of, and that the adoption of some comprehensive scheme may be the result.

In conclusion, we have shown I think that India embodies all the constituent qualities necessary to enable her to become the first cotton producing country in the world. We have seen that means are being vigorously employed to assist her onward progress in this and other respects, and there is great hope that before long she will rival America both in the quality and quantity of produce in the English market. The cloud which has so long o'ershadowed the vast Asiatic Continent is quickly dissipating before the dawn of civilization, and in opening up the country, and developing its resources, our legislators will have followed the most certain road for securing its emancipation and forward march in the sure path of moral and material development.

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A large and valuable collection of samples of Cottons, Muslins, Yarns, and Cloths were exhibited, furnished from the Industrial Museum at the India House, and by several private firms.

## DISCUSSION.

Previously to inviting discussion, the President (Colonel Sykes, M.P.) called on Dr. Watson for some remarks on the admirable collection of samples then on the table.

Dr. Forbes Watson with reference to the cotton samples, 103 in number, remarked that 63 were East Indian, 20 of the native or indigenous, and 43 of the exotic or American kind, and that the remaining 40 represented so far the growth of every other part of the world,—he (Dr. Watson) was having a careful determination made of the relative value of the different samples, and of the comparative lengths and other qualities of their staples. He had hoped to have had the whole of the latter in time to have given the heads that evening, but had not succeeded,—some results of importance had however already been obtained. It was now admitted that with all its imperfections East India native cotton could be employed in our manufactures, to the extent of from 70 to 75 per cent., but these samples conclusively showed that India could furnish exotic cotton of a quality sufficiently fine for perhaps all our wants. The various cottons from the American seed, grown in India, were found in point of length of staple quite as good as that produced in its native soil, indeed in that important respect the New Orleans samples on the table were even exceeded by the majority of those procured from similar seed in Indian ground, and in regard to the Sea Island variety of cotton, he found that it also retained its long staple characteristic when grown in India.

With a view to receiving a valuation of these cottons, irrespective of preconceived notions of the superior manufacturing qualities of that of one country over another, and as far as possible to eliminate the influence of bias, he (Dr. Watson) had forwarded samples, with simply numbers attached, to the highest authorities on such points, and hoped before long to be in possession of the results. He would however call particular attention to some of the samples on the table, to one from Sea Island seed, grown within 30 miles of Calcutta, and valued by Mr. Bazley at 1s. 6d. per lb., and to others received from Mr. A. C. Brice, and grown in Dharwar from Egyptian seed, and valued at 9d. per lb., remarking at the same time that the staple of the latter, as far as length was concerned, considerably excelled that of the former, and

that although other physical qualities, as well as the adventitious matters present, would considerably militate against its value, still the difference in price seemed very great and showed the necessity for the adoption of a valuation standard which would have reference to the intrinsic qualities of the cotton fibre itself, irrespective of preventible or removable sources of deterioration.

With regard to the question of the gradual deterioration of exotic cotton grown in India, as resulting from the influence of causes beyond human control, such as climate, &c., Dr. Watson stated that his examination of the evidence brought forward on this important point, had led him to conclude that such an effect was not produced,—that the samples on the table tended to confirm this opinion, and that besides he had lately received a communication from Dr. Wight (the greatest living authority on such a subject) fully confirmatory of the same view. In conclusion he repeated his conviction that India was perfectly capable of producing every quality of cotton required by the manufacturers of this country.

Mr. Patrick Smollett, M.P., was not a member of the Asiatic Society, but if allowable, would say a few words on the subject of the very able and interesting Paper with which Mr. Mann had favoured them ; he had the previous week delivered a lecture in Manchester on the same subject, and he would state then as he had stated there, that cotton could be produced in India equal to the British demand ; it only required that impediments should be removed, and the greatest in his opinion was the present system of land tenure. He had served 30 years in Madras, and knew there was no possible way to obtain land by purchase under the present tenure ; it was the curse of the country, and until that was removed there could be no progress ; capital would never be invested in improvements until its removal ; he (Mr. Smollett) would gladly invest his capital in that channel were it done. In Bengal, Behar, and Orissa (valued at four millions per annum), Lord Cornwallis, many years since, introduced permanent tenure, and bestowed lands in perpetuity, and they now yielded nine and ten millions, the people thereby being the recipients of six millions profit. Madras originally produced £3,600,000, and yet after numerous confiscations and annexations that Presidency only produced £3,300,000. The revenues of Bombay had not increased, if they left out Scinde and other recent territorial acquisitions,—Dharwar and Candish had not increased in value, but on the contrary these provinces had declined in prosperity under their rule. Until the proprietorship of land was wrested from Government neither social nor material improvements would progress, let this be done and the rest would

follow. In his (Mr. Smollett's) opinion middlemen were necessary, it was not the usurer who affected the earnings of the labourer, it was the native officers of Government who plundered him. In Northern Madras and Bombay there were no safe tenures; Col. Sykes would say the village cultivator was the true landlord of the soil, but he (Mr. Smollett) contended that Government was the landlord. They pretended to call the ryot the landlord, but the demand Government made upon him was a rack rent and not a land tax. Every village was a farm, the boundaries of which were as well known, and its condition and value as well defined, as were the estates of any country gentleman in Great Britain. All that it was necessary to do was to insist that the Government ownership should cease and be conveyed to private landlords, subject to a fair taxation to enable the Government to defray the expenses of the State. Free trade in land was alone required, with roads and cheap conveyance, and if this were conceded the owner of the land might be left to grow that commodity which best suited the soil and yielded the best return.

Mr. J. B. Smith, M.P., had listened with great interest to Mr. Mann's excellent lecture. He thought Mr. Mann had demonstrated beyond a doubt that India was capable of producing as much cotton as they required. The point to which they should direct attention was, the obstacles which prevented its more extended production, and the reasons why they received so little from a country capable of producing so much. The honourable member for Dumbarton (Mr. Smollett) was of opinion, that it was owing to the present system of land tenure which prevented the application of capital and skill to the cultivation of the soil, and he (Mr. Smith) agreed with him, that this was a very great obstacle. No Englishman could hold an acre of land in India in fee simple. He had lately seen a remarkable letter from Mr. Bourne on this subject. That gentleman, although supported by all the chambers of commerce in England, was about eleven years before he succeeded in his application to the East India Company for permission to navigate the Indus by means of steam-trains. This arrangement being at length completed, it became necessary to erect machine shops at a great expense in India: would it be believed, that the Government refused to sell to Mr. Bourne a piece of waste land, "a mere desert," whereon to erect those buildings and houses for his workpeople? Could it be expected that India would progress under such a system as this, which, instead of encouraging the settlement of Englishmen in India, drove them from the country? But there were other obstacles to the growth of cotton in India, and its successful competition with America. The average production of clean cotton

per acre in India was only 70 lbs., while in America it was 400 lbs. Mr. Mann had stated that cotton was brought 1000 miles down the Mississippi river at a cost of one-eighth of a penny per pound, but he also told them, that the cost of carriage of cotton from Berar to a port was  $2\frac{1}{2}$ d. per lb., so that the cost of freight in America was about 6 per cent. on the value of the cotton, while in India it amounted to 125 per cent. The question became, could this cost of carriage be reduced? Could the Indian planter be placed on an equal footing with the American in the cost of carrying his cotton to a market? They had evidence before the India Colonization Committee that this could be effected. Captain Haig, who had surveyed the Godavery river, which runs 100 miles through the finest cotton district in India, stated that it might be made navigable for a distance of 500 miles at an expense of £300,000, and that then cotton could be brought down the river to Coringa, the finest port on the eastern coast, at an expense of one-eighth of a penny per pound. He (Mr. Smith) knew that his honourable friend (Col. Sykes) said it was impracticable to render the Godavery navigable; but he was happy to say, that Sir Charles Trevelyan, accompanied by a corps of scientific men, had been to examine the river with his own eyes, and in an able minute confirmed Capt. Haig's report, and pronounced it a work of the greatest value and importance, opening out the richest part of Central India. If cotton could be brought from Berar at  $\frac{1}{8}$ d. per lb. instead of  $2\frac{1}{2}$ d. per lb., the buyer would be able to afford a higher price to the grower than at present, and the growth of cotton would thereby be greatly encouraged in this district. But was it possible to increase the production of cotton per acre? Why could not India produce 400 lbs. per acre? Because the soil of India was dry, and that of America moist. But India had magnificent rivers, why were they allowed to run uselessly to the sea? In ancient times this water was applied to the irrigation of the land. In the province of Madras alone there were agricultural tanks and irrigation works, constructed centuries before an Englishman set foot in India, which, taking into account the difference in the value of money in India and in England, it is estimated, represented about the same value as the amount of capital invested in English railways. Why could no water be suitably applied to the growth of cotton? They had evidence that it was formerly grown by irrigation, and they knew by the evidence of experiments that it could be produced equal in quantity and quality to American. He (Mr. Smith) had samples of watered cotton grown from native seed equal to the best Orleans worth 8d. per lb. If, therefore, by means of irrigation, the grower could produce on the

same extent of land four or five times as much as at present, and of a quality worth 8d. instead of 5d. per lb., the cultivation of cotton would become so profitable as to encourage an enormous increase of growth.

Mr. J. T. Mackenzie said, that irrigation never existed, at all events to anything like the extent stated.

Mr. J. B. Smith.—The Public Works Commissioners reported that vast works did exist, and every book on India confirmed it. Sir Emmerson Tennant, in his work on Ceylon, described the largest work the world ever saw—a valley of about fourteen miles in extent embanked for a reservoir. It was the application of water to the soil that was the source of the extraordinary fertility of which they read in tropical countries. It was the source of wealth of ancient Egypt, Babylon, and Nineveh, where, since the destruction of their canals and watercourses, the remains of which were to be seen to that day, the soil which maintained their vast populations had become a sandy desert. India could only be improved by the application of skill and capital to its soil; every encouragement therefore ought to be given to tempt British enterprise to India as the best means of developing its mighty resources, and of improving the moral and material condition of its people. Let them have the land in perpetuity, as in the British colonies; give them good roads, means of cheap transit, safety for person and property, and they might yet hope to see British rule a blessing to India and to England.

Mr. J. T. Mackenzie had listened with pleasure to Mr. Mann's able paper, and quite concurred with his friend Mr. Smollett, that it was most essential to impress upon the Government of India the necessity of permitting perfect titles to land to be given, not only for cotton cultivation, but for any real development of India's resources. The advocates of the production of cotton in India for export however, frequently overlooked other difficulties which had recently arisen in the endeavours to make India an increased source of supply. He especially alluded to the increase in the value of labour, and the enormous rise in the value of other agricultural products, as compared with cotton. The real question on which an extended supply from India depended, was, would cotton growing pay the farmer as well as other crops? In Mr. Mann's Tables, the price of East Indian cotton at Liverpool for the last two years averaged 5½d. per lb., and his (Mr. Mann's) average of the yield was taken at 100 lbs. of picked cotton per acre, which he (Mr. Mackenzie) thought rather too much. But accepting this somewhat excessive estimate, it would make the value of the produce of an acre of cotton when landed at Liverpool,

£2 3s. 9d. ; of this amount the Indian farmer only received 30 per cent., or 12s. 11d. per acre, the balance amounting to 70 per cent., going in interest to the money lender, transit to seaport, freight, insurance, shipping, and selling commission and charges. Within the last seven or eight years oil seeds had risen in value 300 per cent. ; rice and wheat, the staple articles of food, had risen 200 per cent. The present value at the place of production of an acre of oil seeds in India, would be about £3, of wheat and rice £2 10s., against the 13s. per acre of cotton, and they required much less labour for their cultivation. Under these circumstances he was apprehensive that the exports of cotton from India would decrease, unless there was a great rise in its market price at Liverpool, or unless by means of irrigation, the production could be increased to something like the American yield of 300 or 400 lbs. per acre.

Mr. Smollett. But at this price, supply from India is largely increasing.

Mr. Mackenzie. For the last two years the exports have not increased, as the increase of exports made to the United Kingdom was more than counterbalanced by the falling off to China.

The President, previous to proposing a vote of thanks to Mr. Mann, which would no doubt be unanimously accorded, would address a few words to the Society. On the table before them were arranged some one hundred specimens of cotton produced in various parts of the world, and some of those grown in India were valued by Mr. Bazley, M.P. for Manchester, at 1s. 6d. per lb. ; there could be no doubt therefore of the capabilities of India to produce high priced cotton, the proofs were before them. How was it then that the quantities desired in Lancashire did not arrive ? There were various causes, one of which was the uncertainty of price. If the price ranged high in the English market, very large quantities of Indian cotton found their way to it, as was manifest by a glance at the diagram of importations drawn by the late Dr. Forbes Royle, and which he (the President) held in his hand. In the year 1806, only 10,000 bales were imported of East India cotton, but in 1818 there were 240,000 bales, which in 1830 fell to 30,000 bales, but rose in 1841 to 270,000 bales. With such enormous fluctuations, and the consequent uncertainty of sale, the Indian producer was deterred from systematic cultivation, a steady demand would insure a steady supply, and that steady supply therefore rested with the cotton merchants and spinners in England. They had hitherto called upon the government of India to stimulate the growth of cotton ; but the government of India had no more right to dictate to the cultivator what he should grow to supply a cotton dearth in

Lancashire, than the government of England would have had to compel English landlords to grow potatoes on their estates when there was a potato famine in Ireland. Mr. J. B. Smith's panacea to insure cotton growth was by works of irrigation ; now it had never been the practice of the natives to irrigate cotton lands. Mr. Smollett's panacea was giving the people a fee simple in the soil. But he (the President) would suggest, without reference either to fee simple or irrigation, that those who wanted a steady supply of cotton had only to tread in the steps of the friendless European adventurers, who had established the growth and steady supply of indigo, the exportation of which a few years ago was scarcely known in India ; these parties, without becoming land owners, had rented lands from zemindars or other proprietors, and with borrowed money engaged in indigo cultivation, and set up indigo factories, some of them of prodigious extent and value. Upon the indigo estate of Mulnath, formerly in the possession of Mr. Andrews, and now in the occupation of the Bengal Indigo Company, there were thirteen factories, and the population upon the whole estate was about 209,000 souls. Sugar, oil seeds, and silk, were now being produced by similar agencies, and what had already been done and was then doing in those articles, could be done for the production of cotton. Let the Manchester manufacturers, instead of calling upon Jupiter to aid them, put their own shoulders to the wheel, and their cotton waggon would come to them regularly, with any desired load. He (the president) had for twenty-five years promulgated those opinions, both orally and in print, and was glad to find that a Cotton Supply Association had been formed in Lancashire, and doubted not, with steadiness of purpose, they would obtain from India any amount of cotton, and of any quality they might desire.

A vote of thanks was then passed to Mr. Maun.

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TABLE No. 1, showing the Quantity of Raw Cotton Imported into the United Kingdom since 1783, distinguishing the Imports from India and other places; and the Price per lb. of "United States Uplands," and "East India Surat," Cotton in the Liverpool market.

Years.	East Indies.	Other places.	Total Imports.	Price, U.S. uplands.	Price, E.I. Surats.
	lbs.	lbs.	lbs.	d. per lb.	d. per lb.
1783 ..	114,133	9,621,530	9,735,663	..	..
1784 ..	11,440	11,470,643	11,482,083	..	..
1785 ..	99,455	18,300,929	18,400,384	..	..
1786 ..	..	19,475,020	19,475,020	..	..
1787 ..	..	23,250,268	23,250,268	..	..
1788 ..	..	20,467,436	20,467,436	..	..
1789 ..	4,973	32,571,050	32,576,023	..	..
1790 ..	422,207	31,025,398	31,447,605	..	9
1791 ..	3,351	28,703,324	28,706,675	..	11
1792 ..	..	34,907,497	34,907,497	..	13
1793 ..	729,634	18,311,295	19,040,929	17	13
1794 ..	239,245	24,119,322	24,358,567	15	10
1795 ..	197,412	26,203,928	26,401,340	21	17
1796 ..	609,850	31,516,507	32,126,357	21	17
1797 ..	912,844	22,441,527	23,354,371	24	16
1798 ..	1,752,784	30,127,857	31,880,641	33	23
1799 ..	6,712,622	36,666,656	43,379,278	38	19
1800 ..	6,629,822	49,380,910	56,010,732	26	14
1801 ..	4,098,256	51,966,049	56,064,305	27½	16
1802 ..	2,679,483	57,666,117	60,345,600	26	14
1803 ..	3,182,960	50,629,324	53,812,284	12½	11½
1804 ..	1,166,355	60,700,974	61,867,329	14	11½
1805 ..	694,050	58,988,356	59,682,406	16½	14½
1806 ..	2,725,450	55,450,833	58,176,283	18	14½
1807 ..	3,993,150	70,932,156	74,925,306	17½	13
1808 ..	4,729,200	38,876,782	43,605,982 <sup>1</sup>	25½	19½
1809 ..	12,517,400	80,294,882	92,812,282	24	18½
1810 ..	27,783,700	104,705,235	132,488,935	18½	15½
1811 ..	5,126,100	86,450,435	91,576,535	14	11½
1812 ..	915,950	62,109,986	63,025,936 <sup>2</sup>	18	14
1813 ..	Records destroyed		by fire.	25½	17½
1814 ..	4,725,000	55,335,239	60,060,239 <sup>2</sup>	30	21½
1815 ..	7,175,243	93,533,903	100,709,146	21½	17½
1816 ..	6,972,790	88,308,175	95,280,965	18½	15½
1817 ..	31,007,570	95,296,119	126,303,689	20½	17

<sup>1</sup> The year 1808 was that in which an embargo was laid by America on foreign trade

<sup>2</sup> 1812-14 were those of the American War.

Table No. 1—*continued*.

Years.	East Indies.	Other places.	Total Imports.	Price, U.S. uplands.	Price, E.I. Surats.
	lbs.	lbs.	lbs.	d. per lb.	d. per lb.
1818 ..	67,456,411	111,289,166	178,745,577	20	16½
1819 ..	58,856,261	92,296,893	151,153,154	13½	9½
1820 ..	23,125,825	128,516,830	151,672,655	11½	8½
1821 ..	8,827,107	123,709,513	132,536,620	9½	9½
1822 ..	4,554,225	138,283,403	142,837,628	8½	6½
1823 ..	13,487,250	177,915,253	191,402,503	8½	6½
1824 ..	16,420,005	132,960,117	149,380,122	8½	6½
1825 ..	20,005,872	207,999,419	228,005,291	11½	6½
1826 ..	20,985,135	156,622,266	177,607,401	6½	5½
1827 ..	20,930,542	251,518,367	272,448,909	6½	5½
1828 ..	32,187,901	195,572,741	227,760,642	6½	4½
1829 ..	24,857,800	197,909,611	222,767,411	5½	4
1830 ..	12,481,761	251,479,691	263,961,452	6½	5
1831 ..	25,805,153	262,869,700	288,674,853	6	4½
1832 ..	35,178,625	251,653,900	286,832,525	6½	5
1833 ..	32,706,453	270,950,384	303,656,837	8½	6½
1834 ..	32,906,752	293,968,673	326,875,425	8½	6½
1835 ..	41,190,201	322,512,762	363,702,963	10½	7½
1836 ..	75,618,314	331,340,713	406,959,057	9½	6½
1837 ..	51,075,562	356,211,221	407,286,783	7	4½
1838 ..	40,217,613	467,632,964	507,850,577	7	5
1839 ..	46,994,253	342,402,306	389,396,559	7½	5½
1840 ..	76,148,296	516,339,714	592,488,010	6	4½
1841 ..	97,008,199	390,984,156	487,992,355	6½	4½
1842 ..	88,365,250	443,384,836	531,750,086	5½	4
1843 ..	65,658,696	607,534,420	673,193,116	4½	3½
1844 ..	88,638,824	557,472,430	646,111,304	4½	3½
1845 ..	58,255,306	663,721,647	721,979,953	4½	3
1846 ..	34,033,721	433,822,553	467,856,274	4½	3½
1847 ..	83,542,864	391,164,751	474,707,615	6½	4½
1848 ..	83,773,078	629,247,083	713,020,161	4½	3½
1849 ..	70,162,364	685,306,648	755,469,012	5½	3½
1850 ..	118,065,379	515,511,482	633,576,861	7½	5½
1851 ..	120,010,443	637,369,306	757,379,749	5½	4
1852 ..	84,857,684	844,924,864	929,782,448	5½	3½
1853 ..	179,447,850	715,830,899	895,278,749	5½	3½
1854 ..	116,744,096	770,589,053	887,333,149	5½	3½
1855 ..	143,486,672	748,265,280	891,751,952	5½	3½
1856 ..	178,378,592	845,507,712	1,023,886,304	6	4½
1857 ..	248,301,312	721,017,584	969,318,896	7½	5½
1858 ..	129,398,752	904,943,424	1,034,342,176	6½	4½

TABLE No. 2, showing the Quantity of Raw Cotton exported from each of the three Presidencies of India, and its Destination : the Number of Pieces of Native Cotton Piece Goods, and the Weight of Cotton in same, exported from India ; the Weight of Raw Cotton in, and Value of, British Cotton Manufactures exported to India ; and of Raw Cotton and Cotton Piece Goods imported into the United Kingdom from India.

Year.	Exports of Raw Cotton from				Export of Raw Cotton from all India to				Native Piece Goods.		Weight of Raw Cotton in Manufac- ture exported to India.	Value.		Year.
	Bombay.	Madras.	Bengal.	Great Britain.	China.	Other parts.	All parts.	Pieces.	lbs.	Cotton Manufactrs. exported to India.		£	Raw Cotton and Cotton Goods imported from India.	
1840	131,563,437	12,539,000	15,079,974	85,576,622	50,433,490	23,172,199	159,182,311	3,176,517	3,238,944	43,216,920	3,873,186	...	...	1840
1841	101,010,568	25,994,500	9,244,511	118,344,711	62,098,639	13,612,359	194,555,879	2,904,441	7,351,546	40,497,377	8,427,612	...	...	1841
1842	131,779,330	25,948,300	14,183,150	72,627,646	108,294,460	9,988,874	189,910,980	2,675,190	6,955,494	41,208,855	3,060,472	...	...	1842
1843	171,443,828	14,310,000	16,547,940	93,501,466	80,197,721	28,802,381	202,501,765	2,692,092	6,999,439	57,277,116	3,937,414	...	...	1843
1844	121,828,197	26,074,500	16,578,820	58,130,526	101,100,122	5,246,669	164,477,317	2,437,236	6,836,813	66,989,153	4,793,192	...	...	1844
1845	108,296,816	10,288,000	7,703,734	43,177,397	77,749,581	5,350,372	126,377,550	2,501,013	6,502,638	59,810,224	4,210,423	...	...	1845
1846	146,833,317	12,736,500	9,310,514	91,074,244	74,970,163	3,036,424	169,080,831	2,929,578	7,616,902	67,636,630	4,341,885	...	...	1846
1847	183,082,712	9,463,075	12,771,505	94,201,740	62,198,000	3,919,495	180,317,295	2,431,513	6,373,933	48,704,155	3,175,535	...	...	1847
1848	134,403,020	11,290,755	9,937,611	67,203,519	96,119,965	5,368,042	163,631,466	2,071,732	5,836,535	52,749,440	3,037,871	...	...	1848
1849	150,734,963	13,064,980	1,845,277	110,690,337	52,445,222	2,529,641	165,665,220	2,227,260	3,790,876	71,690,355	3,977,805	...	...	1849
1850	183,903,997	19,438,320	23,131,166	141,446,798	77,030,629	7,976,256	226,473,683	1,912,983	4,973,677	73,653,362	4,703,813	...	...	1850
1851	195,412,160	17,381,519	40,739,152	81,104,223	160,717,631	11,730,957	333,532,831	2,246,079	5,839,805	83,137,110	5,046,221	...	...	1851
1852	197,664,728	31,759,247	33,484,139	181,360,904	75,671,742	5,875,438	382,908,174	2,667,120	6,934,312	81,667,963	4,707,120	...	...	1852
1853	171,488,514	12,207,016	14,096,208	138,183,429	55,777,008	3,801,328	197,761,765	2,147,106	5,532,475	83,657,384	5,078,668	...	...	1853
1854	153,222,447	12,926,513	7,631,232	119,313,537	45,893,923	8,672,732	173,780,192	2,255,841	5,943,186	114,860,198	6,560,236	1,798,421	...	1854
1855	217,016,915	7,149,364	13,013,470	170,771,510	56,691,112	9,717,927	237,179,949	2,197,707	5,714,038	107,066,056	5,812,974	2,827,328	...	1855
1856	278,873,346	28,353,516	17,226,832	233,410,036	48,784,561	17,458,927	319,633,524	2,464,629	6,408,035	102,453,233	5,257,445	3,597,752	...	1856
1857	289,194,443	20,219,513	9,936,4	197,221,247	20,524,119	42,608,056	300,334,052	2,316,075	6,024,795	98,439,323	6,083,266	5,519,669	...	1857

NOTE. — The Indian official year ends 30th April ; thus the Indian statistics given above are for the years ending 30th April, or 1857 means in that case the year ending 30th April proximate, or 30th April, 1858.